UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,156	01/30/2002	David J. Mielke	10011094-1	7543

7590	12/11/2003

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EXAMINER
SIEK, VUTHE

ART UNIT	PAPER NUMBER
2825	

DATE MAILED: 12/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/060,156	MIELKE, DAVID J.
	Examiner	**Art Unit**
	Vuthe Siek	2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 October 2003</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-11,14-16 and 19-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-11,14-16 and 19-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

1.   This office action is in response to application 10/060,156 filed on 1/30/2002.

Claims 1-4, 7-11, 14-16 and 19-26 remain pending in the application.

Claim Objections

2.   Claims 9-10, 14-15 and 19-20 are objected to because of the following

informalities: the above claims have dependency problem, since a claim can't depend

on a canceled claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-4, 7-11, 14-16 and 19-26 are rejected under 35 U.S.C. 102(e) as being

anticipated by Roethig et al. (6,487,705).

5.   As to claims 1, 11, 16, 21 and 24, Roethig et al. teach electronic design

automation tools including embedded timing analysis, optimization and placement of

cells with embedded timing analysis and optimization. The method can include

designing an integrated circuit by routing with embedded timing analysis and

optimization; performing reference timing analysis and embedded timing analysis using

a parasitic estimation model (extracted timing model representing a second model).

The method compares at least two slack distributions resulting from timing analyses,

where a first slack distribution representing a first model and a second slack distribution

corresponding to a parasitic estimation model (refereed to as an extracted timing

model). Because the parasitic estimation model (second model) reflected the first

model, the second model is an abstraction of the first model. The method can include

calculating and comparing autocorrelation function of slack distributions. The method

can also include calculating interrecorrelation functions of slack distributions (see

summary; cols. 6-8; Figs. 3A-3B, 4-6). Thus, Roethig et al. teach receiving a reference

timing value (from a reference timing analysis); receiving an extracted model timing

value (from embedded timing analysis); determining difference between said reference

timing value and said extracted model timing value (comparison from resulting of timing

analyses). Also Roethig et al. teach outputting result when the comparison is

successful.

6.   As to claims 2-3, Roethig et al. teach database for storing reference design,

design data and information related to performing timing analyses. Thus, databases

can also be used to store data representing the predetermined permissible range, since

the predetermined permissible range is considered to be a required accuracy that may

be limited to be within an error range when performing above comparison.

7.   As to claims 4, 14-15, and 19-20, Roethig et al. teach generating a structural

model representative of a signal path and parasitic estimation model (predetermined

extracted timing model) (col. 6, lines 38-43; Figs. 3A).

8.   As to claims 7-10, Roethig et al. teach the comparison between timing reference and timing from embedded timing analysis would establish a satisfactory match or mismatch (read as whether the difference of timings is within a satisfactory range). Identification and correction of the cause of mismatch result in change of the timing constraints and exceptions from designer, or in the selection of a different parasitic estimation model. Thus, timing analyses and optimization as taught by Roethig et al. would require a controller as claimed in order to establish a satisfactory match or to establish the difference of timings to be within the predetermined permissible range.

9.   As to claims 22-23 and 25-26, Roethig et al. teach the comparison between timing reference and timing from embedded timing analysis would establish a satisfactory match or mismatch (col. 6-6). Identification and correction of the cause of mismatch result in change of the timing constraints and exceptions from designer, or in the selection of a different parasitic estimation model. Thus, timing analyses and optimization as taught by Roethig et al. would require a controller as claimed in order to establish a satisfactory match or to establish the difference of timings to be within the predetermined permissible range. Thus the result of above comparison provides a difference value in order to determine whether the difference value is within an acceptable pre-determined threshold value. If the difference value is not within the acceptable threshold value, another parasitic estimation model (representing second model) corresponding to a first model (first reference slack) can be selected (col. 6).

Remarks

10.   Applicant argued that Roethig et al. do not teach the second model is an
abstraction of the first model. Examiner respectively submits that Roethig et al. teach
comparing slack distribution from parasitic estimation model (second model) with
reference slack distribution (first model) (Figs. 3A, 3B, 4). The parasitic estimation
model (second model) will correlate with reference slack (first model) (col. 6); the
second model is an abstraction of the first model.

11.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time
policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within
TWO MONTHS of the mailing date of this final action and the advisory action is not
mailed until after the end of the THREE-MONTH shortened statutory period, then the
shortened statutory period will expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
the advisory action. In no event, however, will the statutory period for reply expire later
than SIX MONTHS from the mailing date of this final action.

Conclusion

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Vuthe Siek whose telephone number is (703) 305-4958.

The examiner can normally be reached on M-F (6:30-4:00) 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Smith can be reached on (703) 308-1323. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 872-9318

for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 308-

1782.

Vuthe Siek
Primary Examiner
December 6, 2003

VUTHE SIEK
PRIMARY EXAMINER